

Notice of Allowability

Application No.

10/779,607

Examiner

Toniae M. Thomas

Applicant(s)

HSIAO ET AL.

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the election made via phone on 28 Jul 2005.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☒ The drawings filed on 18 February 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 08082005.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Mary Wilczewski
Primary Examiner

EXAMINER'S AMENDMENT

1. This is a first Office action on the merits of Application Serial No. 10/779,607. Currently, claims 1-21 are pending.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-20, drawn to a process of making, classified in class 438, subclass 257+.
 - II. Claim 21, drawn to a product, classified in class 257, subclass 313+.
3. The inventions are distinct, each from the other because of the following reasons: Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed can be made by another and materially different process. For example, a dielectric layer is patterned to form the dielectric islands in the product as claimed. In another and materially different process, the dielectric islands are formed by selective deposition.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Mr. Joe Muncy on 28 July 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-20. Applicant in replying to this Office action must make affirmation of this election. Claim 21 has been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Amendment

7. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

8. Authorization for this examiner's amendment was given in a telephone interview with Mr. Joe Muncy on 08 August 2005.

9. The application has been amended as follows:

In Claims

Claim 21 has been cancelled.

Reasons for Allowance

10. The following is an examiner's statement of reasons for allowance: the prior art of record does not anticipate or render obvious a method for forming a multi-bit stacked-type non-volatile memory substantially as claimed. For example, the closest prior art of record, Chuang et al. (US 2004/0033657 A1), discloses a method for forming a non-volatile memory (see figs. 4a-4n and accompanying text). The method comprises: forming a patterned dielectric layer 403 of silicon nitride on a substrate 401 (fig. 4a and par. 46); forming a dielectric spacer 411a on the side wall of the patterned dielectric layer (figs. 4g, 4h and par. 53); and forming a spacer shaped floating gate 415a on the side wall of the dielectric spacer and over a gate dielectric layer 414a (figs. 4k, 4l and par. 57). However, the Chuang pre-grant published application differs from the claimed invention in that Chuang does not anticipate, teach or suggest forming the patterned dielectric layer 403 such that it contains arsenic. While it is known to use arsenic silicate glass (ASG) as a dielectric material in place of silicon nitride, as evidenced by Hoshino et al. (col. 12, lines 19-26), it would not have been obvious to one of ordinary skill in the art to modify Chuang by using ASG as the patterned dielectric layer in place of silicon nitride, since the use of ASG would result in the diffusion of arsenic, an

n-type dopant, during the heat treatment to form p-type LDD region 410 via the diffusion of boron from spacer 407a (figs. 4e, 4f and par. 51).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toniae M. Thomas whose telephone number is (571) 272-1846. The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (571) 272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TMT
08 August 2005



Mary Wilczewski
Primary Examiner